

PROJECT DESCRIPTION

(Section 1)

The Hancock Wind Project (project) is an 18 turbine wind energy project located in Osborn, T22MD, and T16MD in Hancock County, Maine, approved by the Maine Department of Environmental Protection (MDEP) on July 22, 2013. The project permitted 2 turbine designs: Vestas V112 or Siemens 3.0-113 machines, each with a 3.0-megawatt (MW) rated power. The Vestas V112 turbines would be on a 94-meter tower and have 112-meter rotor diameter, for a total height, with the blade fully extended, of 150 meters (492 feet). The Siemens 3.0-113 turbines would be on a 99.5-meter tower and have a 113-meter rotor diameter, for a total height of 156 meters (512 feet).

This amendment application requests the option of using a third turbine, the Vestas V117, 3.3-MW turbine. The Vestas V117 has a higher tower height for the turbines but use of this option eliminates the turbine closest to Spectacle Pond on Spectacle Pond Ridge, resulting in a total of only 17 instead of 18 turbines. The Vestas V117 has a 117-meter rotor diameter and a tower height of 116.5 meters. Accordingly, use of this turbine results in a total turbine height of 175 meters (574 feet). If this turbine option is chosen for construction, Turbine 05 in T22MD would not be constructed (Figure 1). In addition, the proposed temporary and permanent meteorological towers would increase in height and clearing for guy wires to match the new hub height, 116.5 meters.

There are no other changes to the turbine pad size, access roads, or other aspects of the permitted civil design resulting from use of the Vestas V117 turbine option, and no additional resource impacts.

This amendment application addresses the following sections of the MDEP permit approval that have potential increased impacts resulting from use of the Vestas V117 turbine option. This amendment also corrects an error in the original Section 5 sound report that was discovered while analyzing the Vestas V117 sound emissions, and provides updated financial capacity information in response to the Department's request.

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FINANCIAL CAPACITY

(Section 3)

The total cost for construction of the project utilizing the Vestas V117 turbine option is expected to be approximately \$112 million, categorized as follows:

Category	Amount (\$ million)
Turbines and foundations	65.7
Transportation	3.0
Turbine installation cost	6.5
Roads	5.5
Electrical collector lines	6.0
Other construction costs (inc. O&M building)	25.3
Total	112.0

There is a small increase in overall project costs with the Vestas V117 turbine due primarily to an increase in transportation and installation costs resulting from the larger turbine components associated with the Vestas V117 model. The per-turbine cost is higher with the Vestas V117 turbine, but the line item for total turbine and foundation costs is reduced due to the reduction in total number of turbines.

There are no changes to the project structure and financing associated with use of the Vestas V117 turbine option. Attached as Exhibit 3A is the Applicant's response to the Department's prior request for updated information on financial capacity in light of the Law Court's decision in *Houlton Water Company v. Maine Public Utilities Comm'n*, 2014 ME 31. Attached as Exhibit 3B is an updated balance sheet for First Wind and its subsidiaries. As reflected in those materials, First Wind has demonstrated financial capacity for the project, including use of the Vestas V117 turbine option.

Hancock Wind, LLC is a Delaware corporation with a presence in Maine. Exhibit 3C is information from the Maine Secretary of State demonstrating that the corporation remains in good standing.

NOISE

(Section 5)

Attached as Exhibit 5A is an analysis by Bodwell Enviro Acoustics of the sound impacts associated with the project using the sound power output of the Vestas V117 at a 116.5-meter tower height. That analysis demonstrates that there will be no sound impacts to receptors above the state regulatory limit of 42 dBA, and that the project will also be in compliance with the local Town of Eastbrook sound ordinance. Although not required to demonstrate

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compliance with applicable sound regulations, Exhibit 5A also provides an analysis of the sound from the project in conjunction with the operating Bull Hill Wind Project.

During the course of running the sound model for the Vestas V117 turbine option, it was discovered that 4 turbine locations included in the model analysis conducted for the permitted Vestas V112 or Siemens 3.0-113 machines were incorrectly located. That model was rerun with the correct turbine locations and updated calculations for receptor points, and an addendum to the January 2013 sound report is included in Exhibit 5B. There were no significant differences in the results and the addendum demonstrates that the existing permitted turbines comply with all regulatory limits.

WETLANDS AND WILDLIFE

(Section 7)

There will be no change to the wetland, stream, or other natural resource impacts associated with the project.

Although the terrestrial foot print of the project would be reduced by the removal of one turbine, the Vestas V117 turbines would be 19 meters taller than the previously analyzed turbines. Stantec conducted a re-analysis of the preconstruction nocturnal migrant and raptor studies used for the project using the taller height; that re-analysis is included as Exhibit 7. The re-analysis found an incremental increase in the percent of nocturnal migrants below turbine height and no change in the percent of raptors below turbine height.

PUBLIC NOTICES

(Section 25)

Notice of filing for this amendment was published on Friday, June 27, 2014, in the *Bangor Daily News*, and was provided to all persons on the abutter mailing list, and to the appellants in the previous appeal of this project. Copies of the amendment have been filed with the Towns of Aurora and Osborn, the Hancock County Commissioners, and the Land Use Planning Commission office in Bangor. A copy of the public notice, notice list, and Certification of Notice are provided in Exhibit 25.

SHADOW FLICKER

(Section 26)

Stantec conducted an analysis of the likely shadow flicker impacts of the project using the Vestas V117 turbines on a 116.5 meter hub, and removing 1 turbine (Exhibit 26).

The assessment evaluated shadow flicker levels from the project and determined that shadow flicker is reduced at the nearest receptors, and there are no receptors where flicker impacts are

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expected to exceed the MDEP guideline of 30 hours per year under expected meteorological conditions.

PUBLIC SAFETY

(Section 27)

The safety setback of 1.5 times the height of the Vestas V117 is 262.5 meters (861 feet). This setback is illustrated in Figure 1 of Exhibit 27, and is met at all locations. The parcel shown near Turbines 1-4 is a participating landowner. Also provided in Exhibit 27 is a safety certification for the Vestas V117 turbine.

TANGIBLE BENEFITS

(Section 28)

The following summarizes the changes to Section 28.0 of the original Application resulting from use of the V117 turbine option. To facilitate review, Table 28-1 from the original Application is provided below in a track changes format identifying changes associated with the V117 turbine option.

Table 28-1 (Revised) Summary of Changes to Tangible Benefits from Hancock Wind Utilizing the V117 Turbine Option	
\$110,000,000 \$112,000,000	Total Capital Investment
47,500,000 \$49,347,222	Est. Construction/Supply Chain Spending in Maine (See 28.2.6)
\$10,000,000 \$10,388,888	Est. Construction/Supply Chain Wages for Maine-based Labor (See 28.2.6)
100	Est. Direct, Full-time Maine-based Construction Jobs (See 28.2.6)
95	Est. Maine-based firms First Wind will utilize to build Hancock, based on supply chain of First Wind's 5 previous Maine wind farms
\$358,000 \$362,000	Average Property Taxes Paid Annually (See 28.2.5)
\$96,000 \$92,000	Community Benefits Package (See 28.2.3) Equivalent to \$5,333 \$5,411 per turbine per year
\$10,000	ATV Club (See 28.2.4)
\$25,000	Maine Wind Farm Snowmobile Trail Fund (See 28.2.4)
60,000 52,800	Approximate tonnage of CO2 avoided annually from 450,000 132,500 MWh ¹ of clean, wind energy (See 28.3)

The changes in the total capital investment are detailed in Section 3. The changes to construction/supply chain spending and wages for Maine-based labor were adjusted to reflect the increase in total capital investment for the V117 option.

¹ Pending final turbine selection.

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The change in average property taxes paid annually reflects an approximate average annual increase of \$4,000 in taxes paid to Hancock County resulting from the increase in capital costs of the turbines. The change in the community benefits package reflects the elimination of one turbine in the Town of Osborn and affects only the Osborn Community Benefits Package.

The estimated avoided emissions reflects an updated estimate of annual generation for the Hancock Project. Using the V117 turbine option annual generation is expected to be 132,500 MW hours per year. This estimate reflects updated site specific wind data. Use of the V117 turbine option results in avoided NOx emissions of 53 tons, and avoided SO2 emissions of 176 tons.

DECOMMISSIONING

(Section 29)

J.S. Sewall Company evaluated the costs associated with decommissioning the Vestas V117 turbine option; their report is included as Exhibit 29. The evaluation concluded that the decommissioning costs for the larger and taller turbines is estimated at \$939,900. This increase in the expected cost of decommissioning is caused by several factors, including updated wage assumptions; updated scrap value assumptions; and increased removal cost associated with the larger turbines. Proof of financial assurance for this amount will be provided prior to construction, as described in the existing permit.

VISUAL IMPACT

(Section 30)

Terrence Dewan Associates prepared a revised Visual Impact Assessment (VIA) evaluating the visual impact of the Vestas V117 turbine option, attached as Exhibit 30². For purposes of the analysis, they reviewed the potential change in visibility between the 17 Vestas V117 turbines (574 feet) option and the 18 Siemens SWT 3.0-113 turbines (the taller of the 2 approved options). They prepared revised viewshed maps and examined the potential visual impact from the proposed Vestas V117 turbines on 4 Scenic Resources of State of National Significance (SRSNS): i.e., Narraguagus Lake, Upper Lead Mountain Pond, Lower Lead Mountain Pond, and the summit of Tunk Mountain.

The analysis found that turbine visibility will increase slightly on the 3 water bodies due to the greater turbine height. In all cases, the resultant change in visibility will be minor, due to the viewing distances involved and the position of the turbines relative to the treeline. The overall visual impact on SRSNS for the additional design option is anticipated to be low to medium, the same as the impact initially concluded for the project using Siemens SWT 3.0-113 turbines. The

² Note Appendix B has not changed from the original application and thus is not included in Exhibit 30 of this amendment.

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proposed additional design option for the project should not have an unreasonable adverse impact on scenic values and existing uses of these scenic resources of state or national significance.